CLAIMS

1. A transmission joint for transmitting drive between a first shaft and a second shaft (2, 3), comprising a first joint element and a second joint element (4, 5) which can be mutually coupled for the transmission of the drive between the shafts, each element (4, 5) being rotatable about a respective first or second axis of rotation (X1, X2), the first joint element (4) comprising an approximately spheroidal body (6) formed by a plurality of adjacent segment-like portions (6a) having curved external profile surfaces and defining, transverse the first axis (X1), cross-sections of the body with polygonal outlines, the spheroidal body (6) being able to engage a blind axial cavity (10) of the second joint element (5) having a cross-section, transverse the second axis (X2), with a polygonal outline corresponding to the profile of the body (6) and of dimensions such that the first joint element (4) is housed in the second joint element (5) with mutual torsional coupling and a capability for relative inclination of the axes of the joint elements for the transmission of drive between the said shafts (2, 3) with non-aligned axes, characterized in that it comprises, on the joint elements (4, 5), means for limiting the relative angular inclination of the axes (X1, X2) of rotation of the joint elements, in order consequently to permit the correct transmission of drive between inclined shafts (2, 3), up to a preselected maximum angular inclination (A).

2. A joint according to Claim 1 in which the limiting means comprise at least a first surface and a second surface (12, 13) defined on the first and second joint elements (4, 5), respectively, the surfaces (12, 13) being capable of contacting and bearing against one another at the

preselected maximum inclination (A) between the axes (X1, X2) the joint elements (4, 5).

3. A joint according to Claim 1 or Claim 2 in which the surfaces (12, 13) are selected with profiles such that, at the maximum inclination (A) between the shafts, they are in mutual contact, tangentially relative to one another, during the transmission of drive between the elements of the joint (4, 5).

4. A joint according to Claim 3 in which one (12) of the surfaces has a flat configuration extending transverse the axis of rotation of the corresponding joint element (4) and the other (13) of the surfaces has a tapered configuration with generatrices that are inclined to a plane perpendicular to the axis of rotation of the corresponding joint element (5) at an angle equal to the selected maximum inclination (A) between the axes of the joint.

5. A joint according to any one of Claims 2 to 4 in which the surfaces (12, 13) are of substantially annular extent and are arranged in positions facing one another for mutual superimposition at the preselected maximum inclination (A) between the axes (X1, X2) of the joint elements (4, 5).

6. A joint according to one or more of the preceding claims in which the first and second joint elements (4, 5) comprise a first portion and a second portion (9, 11) which are shaped as spherical sectors (9a, 11a) forming parts of a common spherical profile of preselected radius, a shell element (14) with a spherical internal surface being provided for containing the spherical-sector-shaped portions (9a, 11a) and restraining

them with relative coupling of the ball-and-socket type, with a common centre of rotation between the shell (14) and the spherical sectors (9a, 11a).

7. A joint according to Claim 6 in which the shell (14) is made in at least two parts (14a, 14b) of predominantly hemispherical shape.

8. A joint according to any one of Claims 2 to 7 in which the body (6) extends coaxially as an extension of the first portion (9) and the first surface (12) constitutes a shoulder between the first spherical-sector-shaped portion (9) and the body (6).

9. A joint according to Claim 8 in which the first shoulder surface (12) constitutes at least partially a base of the spherical sector (9a) forming the first portion (9).

10. A joint according to Claim 6 in which the body (6) and the corresponding spherical-sector-shaped portion (9a, 9) of the first joint element (4) are produced as a unitary part.

11. A joint according to Claim 6 in which the cavity (10) is formed coaxially in the second portion (11) of the corresponding joint element (5), the second surface (13) extending around the cavity (10) so as to adjoin the spherical region of the second portion (11).

12. A joint according to Claim 11 in which the cavity (10) and the corresponding spherical-sector shaped portion (11a, 11) of the second joint element (5) are produced as a unitary part.

13. A joint according to Claim 6 in which the shell (14) has openings (17) in the region of the axes of rotation (X1, X2) of the joint elements (4, 5) for the insertion of respective axial ends (18, 19) of the joint

elements (4, 5) which are arranged for connection to the corresponding drive-transmission shafts (2, 3), the openings (17) being of an extent such as to permit relative inclination between the joint elements (4, 5), up to the preselected maximum inclination (A).